



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/582,843

07/05/2000

MYOUNG-JIN KIM

P56138PCT

2664

7590

09/23/2004

ROBERT E BUSHNELL & LAW FIRM
1522 K STREET NW
SUITE 300
WASHINGTON, DC 20005-1202

EXAMINER

AHMED, SAMIR ANWAR

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 09/23/2004

19

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/582,843

Applicant(s)

KIM, MYOUNG-JIN

Examiner

Samir A. Ahmed

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-15 is/are allowed.
- 6) ☒ Claim(s) 1-2, 7-8, 16, 20 is/are rejected.
- 7) ☒ Claim(s) 3-6, 17-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 15.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 8, recites “determining differences in unambiguous relative positions between the portions of the reference image and the corresponding inspection object in dependence upon the comparison”. There is no recitation of “determining differences in unambiguous relative positions between the portions of the reference image and the corresponding inspection object in dependence upon the comparison” in the specification as originally filed or how to perform it.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claim 8 recites the limitation “the corresponding inspection object” in lines 2-3.

There is insufficient antecedent basis for this limitation in the claim.

Drawings

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “determining differences in unambiguous relative positions between the portions of the reference image and the corresponding inspection object in dependence upon the comparison” (see paragraph 2) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 7, 8, 12, 16, 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumagai et al. (U.S. Patent 5,339,093).

As to claim 1, Kumagai discloses a method for inspecting inferiority in shape of an object through an inspection image obtained from an inspection object, the object shape inferiority inspection [a liquid crystal panel of an array of parts with a common shape (col. 1, 44-45) is judged to up to standard (no inferiority in shape) or defective (has inferiority of shape) (col. 1, lines 63-68)] method comprising the steps of:

preparing at least one reference image for judgment of shape inferiority in the inspection object considering an allowable error for shape [a blue print or reference pattern is determined (col. 2, lines 50-53) and determines the lower and upper brightness range, the pattern between them is called a pattern within allowable range (an allowable error for shape (col. 3, lines 3-9))];

obtaining the inspection image from the inspection object (col. 2, lines 35-40);

comparing gray scales for each one part, at least, of portions where the reference image and the inspection image mutually correspond (col. 1, lines 60-63,);
and

Art Unit: 2623

judging whether inferiority in shape of the inspection object exists, based on the result of the gray scale comparison (col. 1, lines 63-68, col. 3, lines 40-46).

As to claim 2, Kumagai further discloses, wherein said comparison step comprises comparison of brightness values of each corresponding pixel of the inspection image and the reference image (col. 1, lines 60-63).

As to claim 7, Kumagai further discloses, wherein said inspection image and said reference image are expressed in terms of gray scale (col. 2, lines 62-68).

As to claim 20, refer to claim 1 rejection. Kumagai further discloses making a comparison of grayscale values from a unidirectionally varying range of said values [the upper maximal and lower minimal brightness (grayscale values) is determined by adding (positive values in a unidirection) or subtracting (negative values in a unidirection) (i.e., unidirectionally varying range of said values) the predetermined value to/from the reference pattern (Fig. 1, 108)].

As to claim 20, refer to claim 7 rejection.

As to claim 8 [as best understood by the Examiner], Kumagai further discloses, determining differences in unambiguous relative positions between the portions of the reference image and the corresponding inspection object in dependence upon the comparison [to avoid the error of calculations of brightness caused by the difference of the locations of the pattern (reduce ambiguity about difference in positions), swelling and shrinking is performed on the central pixel (col. 3, lines 14-34)]

Allowable Subject Matter

9. Claims 3-6, 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

As to claim 3, the limitation, "obtaining a range of brightness for the pixel corresponding to a range of allowable error for a position value on a boundary line, on the basis of a function relation with a change in brightness of the pixel according to a change in a position value on the boundary line of the inspection object" in combination with the other elements of the claim and the base claim is not disclosed or suggested by the prior art of record.

As to claim 17 refer to claim 3 objection.

As to claim 6, refer to claim 6 objection stated in the Office Action mailed on 6/18/03, paper number 5.

As to claim 19 refer to claim 6 objection.

10. Claims 9-15 are allowed.

As to claim 9, the limitation "determining a location of an edge of the reference image relative to the inspection image by making a comparison of grayscale values for the portions", in combination with the other elements of the claim is not disclosed or suggested by the prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samir A. Ahmed whose telephone number is 703-305-9870. The examiner can normally be reached on Mon-Fri 8:30am-6:00pm.

Art Unit: 2623

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703-308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SA



**SAMIR AHMED
PRIMARY EXAMINER**